

Notice of Allowability	Application No.	Applicant(s)	
	10/680,280	PAEK, JONG SIK	
	Examiner	Art Unit	
	David Nhu	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/29/04.
2. ☒ The allowed claim(s) is/are 25-44.
3. ☒ The drawings filed on 14 June 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/103,048.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>08</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |



REASONS FOR ALLOWANCE

1. Claims 25-44 are allowed.
2. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests 25, 35, 44: providing a plurality of homogenously formed leads which each includes a first surface, a second surface disposed in opposite relation to the first surface, and a third surface disposed in opposed relation to the second surface and oriented between the first and second surfaces; electrically and mechanically connecting the bond pads of the semiconductor die to the third surface of respective ones of the leads through the use of conductive bumps; and applying an encapsulant to the leads, the semiconductor die and the conductive bumps to form an encapsulating portion which at least partially encapsulates the leads, the semiconductor die and the conductive bumps such that the first and a portion of the third surface of each the leads are covered by the encapsulating portion and the second surface of each the leads is exposed therein (as cited in claims 25, 44); providing a plurality of homogenously formed leads which each includes a first surface, a second surface disposed in opposite relation to the first surface, and a third surface disposed in opposed relation to the second surface and oriented between the first and second surfaces; forming a protective layer on a portion of the third surface of each of the leads such that the protective layer circumvents a portion of the third surface which defines a bump land; electrically connecting the bond pads of the semiconductor die to the bump lands of respective ones of the leads through the use of the conductive bumps; and applying an encapsulant to the leads, the semiconductor die and the conductive bumps to form an encapsulating portion which at least partially encapsulates the leads, the semiconductor die and the conductive bumps such that the first and a portion of

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the third surface of each the leads are covered by the encapsulating portion and the second surface of each the leads is exposed therein (as cited in claim 35).

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Lo et al (6,507,120 B2): Flip Chip Type Quad Flat Non-Leaded Package.

Ohuchi et al (6,208,021 B1) : Semiconductor Device, Manufacturing Method Thereof and Aggregate Type Semiconductor Device.

5. Any inquiry concerning this communication on earlier communications from the examiner should be directed to David Nhu , (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The examiner's supervisor, David Nelms can be reached on (571)272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

David Nhu



July 1st, 2004

DAVID NHU
PRIMARY EXAMINED